

CURRICULUM VITAE

TRACY K. COLLIER

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Education

University of Washington, Seattle, WA	- B.Sc.	1976	Fisheries
University of Washington, Seattle, WA	- M.Sc.	1978	Fisheries
University of Washington, Seattle, WA	- Ph.D.	1988	Fisheries

Positions held

2010-present	Science Advisor , NOAA Oceans and Human Health Program
2003-2010	Division Director , Environmental Conservation Division, NWFSC
1994-2003	Program Manager , Ecotoxicology and Environmental Fish Health Program, NWFSC
2004-present	Adjunct Professor , Dept. Veterinary Microbiology and Pathology Washington State University
2004-present	Affiliate Faculty , Dept. Molecular and Environmental Toxicology, Oregon State University
2004-2006	Principal Investigator , Oceans and Human Health Initiative, NWFSC
2003-2004	Courtesy Faculty , Dept. Molecular and Environmental Toxicology, Oregon State University
1999-2000	Salmon Recovery Team , NWFSC
1996-1997	Principal Investigator on studies to determine injury to fishery resources in Rhode Island salt ponds following the <i>North Cape</i> oil spill.
1995-2005	Center Coordinator for habitat science, NWFSC
1994-1996	Principal Investigator on study funded by NMFS Restoration Center and USEPA to determine efficacy of subtidal remediation
1994-2010	Research Advisor for National Research Council Postdoctoral Research Associate Program
1993-2003	Division Coordinator for Natural Resource Damage Assessment and Restoration Science
1992-1996	Research Group Leader , Biochemical Pathology Group, ECD
1992-2010	Supervisory Research Chemist , ECD, NMFS

1992-1994	Assistant Branch Manager , Ecotoxicology Branch of the ECD, NMFS
1990-1994	Division Coordinator for Natural Resource Damage Assessment/Restoration after the <u>EXXON Valdez</u> oil spill
1993	Visiting Scientist , Laboratory of Marine Molecular Biology, Bergen, Norway.
1991	Chief Scientist , Natural Resources Damage Assessment project in Prince William Sound
1988-1992	Assistant Task Manager , Biochemistry Task of the ECD
1978-1992	Research Chemist , ECD
1976-1978	Fishery Biologist , ECD
1972-1976	Biological Aid/Physical Science Technician , ECD

Honors

2006	Silver Medal for Exceptional Federal Service, Dept. of Commerce, Hurricane Katrina Emergency Response
2006	NOAA Fisheries Employee of the Year, Supervisor Category
2005	Bronze Medal for Superior Federal Service, Dept. of Commerce. NOAA Coastal Storms Program
2004	Special Act Award for proposal establishing a NOAA Center of Excellence in Oceans and Human Health.
2004	Award from NOAA Fisheries HQ , for scientific contributions to NOAA Oil and Dispersant Summit.
2004	Bronze Medal from US Environmental Protection Agency, for contributions to the West Region National Coastal Assessment Program.
2003	Special Act Award, US Delegate to T/V Prestige Oil Spill, Galicia, Spain
1999	Bronze Medal for Superior Federal Service, Dept. of Commerce. Essential Fish Habitat Team
1994, 1996, 2002	Outstanding Performance Award, NMFS, NOAA
1992	Gordon Conference participant, Drug Metabolism
1987, 1991, 1998	Sustained Superior Performance Award, NMFS, NOAA
1984, 1990	Outstanding Performance Award, NMFS, NOAA
1986	Best Student Platform Presentation, PANWAT Annual Meeting
1984	Elected to Society of the Sigma Xi
1972	National Merit Scholar

Committee and Public Service

2010-present	Chair of Advisory Panel on Contaminants of Emerging Concern for Coastal and Marine Ecosystems in California, David and Lucile Packard Foundation.
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2009-present	Appointed to pool of experts for GESAMP (Group of Experts on Scientific Aspects of Marine Protection), advising the United Nations.
2008-2010	Technical Working Group, Sacramento River fall chinook 'collapse'
2008-2009	Governance committee, Puget Sound Monitoring Consortium
2008-present	Editorial Board, Journal of Marine Biology
2007-2010	Aquatic Toxicology Editor, Environmental Toxicology and Chemistry
2006-2010	Executive Committee for Puget Sound Nearshore Partnership (PSNP).
2006-present	Scientific Advisory Board, Unexplained Neurotoxicity in Biological Organisms of Northern Europe. Stockholm University, Stockholm, Sweden.
2006	Ad-Hoc Committee for Water Quality, Puget Sound Partnership
2005-present	Steering Committee for APEC Marine Environmental Training and Education Center (AMETEC), Geoje Island, South Korea.
2004-present	Review Committee for 'Earth and Sky', national radio series.
2004-2005	Biological Review Team, Cherry Point herring status review
2004-2009	Management Committee, Puget Sound Assessment and Monitoring Program
2003-2005	Habitat Restoration Implementation Team, NOAA
1999-2001	Chair, Promotion Review Board, ECD, NWFSC
1999	PMAC Review Board, Conservation Biology Division, NWFSC
1999-2004	Steering Committee, Puget Sound Ambient Monitoring Program
1996-2000	Essential Fish Habitat Team, National Marine Fisheries Service
1996-2000	Technical Advisory Panel to Cook Inlet Keeper Program
1996-1998	Controlling Toxic Inputs Working Group of Puget Sound/Georgia Basin Transboundary Task Force
1996-1998	Salt Pond Injury Technical Working Group for natural resource injury assessment following the North Cape Oil Spill
1995-1996	Strategic Planning Team for Northwest Fisheries Science Center
1995-1997	Management Committee for Puget Sound Estuary Program
1994-2000	Environmental Monitoring Committee, Cook Inlet Regional Citizens Advisory Council
1994-1996	Scientific Advisory Committee, Marine Science Society of the Pacific Northwest
1993-1994	Chair, Technical Advisory Panel for Damage Assessment Regulations Team of NOAA
1992-1995	Reports Review Board, ECD
1991-1995	Personnel Evaluation and Guidance Committee, ECD
1991-1993	Restoration Science Committee, ECD
1988-1993	Computer Committee, ECD

1987

Science Curriculum Review Committee, Bainbridge Island High School

Professional Memberships (past and present)

American Fisheries Society, Marine Technology Society, The Ocean Society, Society of the Sigma Xi, Society of Environmental Toxicology and Chemistry (SETAC), Pacific Northwest SETAC

Peer reviewer (past and present) for

Journals

Aquatic Toxicology, Archives of Environmental Contamination and Toxicology, Bulletin of Environmental Contamination and Toxicology, Canadian Journal of Fisheries and Aquatic Sciences, Carcinogenesis, CRC Press, Chemosphere, Comparative Biochemistry and Physiology, Environmental Health Perspectives, Environmental Science and Technology, Environmental Toxicology and Chemistry, Fish Physiology and Biochemistry, Human and Ecological Risk Assessment, Journal of Coastal Research, Marine Environmental Research, Polycyclic Aromatic Compounds, Reviews in Fisheries Science, Toxicology and Applied Pharmacology, Transactions of the American Fisheries Society

Institutions

CALFED, Hudson River Foundation, Natl. Institutes of Environmental Health Sciences, NOAA Sea Grant, NOAA Damage Assessment Regulations Team, NOAA Oceans and Human Health Program, NOAA Saltonstall-Kennedy Grants, Natural Sciences and Engineering Research Council of Canada, Prince William Sound Regional Citizen's Advisory Council, San Francisco Estuary Institute, Stockholm University, Royal Melbourne Institute of Technology, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, University of Washington, University of Wyoming, City University of Hong Kong

Scientific Publications

127. Hatlen, K., C.A. Sloan, D.G. Burrows, T.K. Collier, N.L. Scholz, and J.P. Incardona. 2010. Natural sunlight and residual fuel oils are an acutely lethal combination for fish embryos. *Aquat. Toxicol. In press.*
126. Arkoosh, M.R., D. Boylen, J. Dietrich, B.F. Anulacion, G. Ylitalo, C.F. Bravo, L.L. Johnson, F.J. Loge, and T.K. Collier. 2010. Disease susceptibility of salmon exposed to polybrominated diphenyl ethers (PBDEs). *Aquat. Toxicol. In press.*
125. Baldwin, D.H., J.A. Spromberg, T.K. Collier, and N.L. Scholz. 2009. A fish of many scales: extrapolating sublethal pesticide exposures to the productivity of wild salmon populations. *Ecol. Appl.* 19:2004-2015.

124. Johnson, L. L., G. M. Ylitalo, M. S. Myers, B. F. Anulacion, J. Buzitis, W. L. Reichert, and **T. K. Collier**. 2009. [Polycyclic aromatic hydrocarbons and fish health indicators in the marine ecosystem in Kitimat, British Columbia](#). U.S. Dept. Commerce, NOAA Tech. Memo., NMFS-NWFSC-98, 123 p.
123. Laetz, C.A., D.H. Baldwin, **T.K. Collier**, V. Herbert, J.D. Stark, and N.L. Scholz. 2009. The synergistic toxicity of pesticide mixtures: Implications for risk assessment and the conservation of Pacific salmon. *Env. Hlth. Perspect.* 117:348-353.
122. Incardona, J.P., Carls, M.G., Day, H.L., Sloan, C.A., Bolton, J.L., **Collier, T.K.**, and Scholz N.L. 2009. Cardiac arrhythmia is the primary response of embryonic Pacific herring (*Clupea pallasii*) exposed to crude oil during weathering. *Env. Sci. Technol.*, 43:201-207.
121. Stewart, J.R., R.J. Gast, R.S. Fujioka, H.M. Solo-Gabriele, J.S. Meschke, L.A. Amaral-Zettler, E. del Castillo, M.F. Polz, **T.K. Collier**, M.S. Strom, C.D. Sinigalliano, P.D.R. Moeller, and A.F. Holland. 2008. The coastal environment and human health: microbial indicators, pathogens, sentinels and reservoirs. *Environmental Health* 7(Suppl. 2):S3. doi:10.1186/1476-069X-7-S2-S3.
120. Sol, S.Y., L.L. Johnson, D. Boyd, O.P. Olson, D.P. Lomax, and **T.K. Collier**. 2008. Relationships between anthropogenic chemical contaminant exposure and associated changes in reproductive parameters in male English sole (*Parophrys vetulus*) collected from Hylebos Waterway, Puget Sound, Washington. *Arch Environ. Contam. Toxicol.* 55:627-638.
119. Johnson, L.L., D.P. Lomax, M.S. Myers, O.P. Olson, S.Y. Sol, S.M. O'Neill, J.E. West, and **T.K. Collier**. 2008. Xenoestrogen exposure and effects in English sole (*Parophrys vetulus*) from Puget Sound, WA. *Aquatic Toxicol.* 88: 29-38.
118. Carls, M.G., L. Holland, M. Larsen, **T.K. Collier**, N.L. Scholz, and J.P. Incardona. 2008. Fish embryos are damaged by dissolved PAHs, not oil particles. *Aquatic Toxicol.* 88:121-127.
117. Olson, O. P., L. Johnson, G. Ylitalo, C. Rice, J. Cordell, **T. K. Collier**, and J. Steger. 2008. Fish habitat use and chemical contaminant exposure at restoration sites in Commencement Bay, Washington. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-88.
116. Myers, M.S., B.F. Anulacion, B.L. French, W.L. Reichert, C.A. Laetz, J. Buzitis, O.P. Olson, S. Sol, and **T.K. Collier**. 2008. Improved flatfish health following remediation of a PAH-contaminated site in Eagle Harbor, Washington. *Aquatic Toxicology.* 88:277-288.
115. Hom, T., **T.K. Collier**, M.M. Krahn, M.S. Strom, G.M. Ylitalo, W.B. Nilsson, R.N. Paranjpye, and U. Varanasi. 2008. Assessing seafood safety in the aftermath of Hurricane Katrina. Page 73-94. In: *Mitigating Impacts of Natural Hazards on Fishery Ecosystems*, McLaughlin, K.D. (Ed.), American Fisheries Society Symposium 64, 446 pp.
114. Johnson L.L., M.R. Arkoosh, **T.K. Collier**, M.M. Krahn, J.P. Meador, M.S. Myers, W.R. Reichert, and J.E. Stein. 2008. The effects of polycyclic aromatic

- hydrocarbons in fish from Puget Sound Washington. In: *The Toxicology of Fishes*. Di Giulio R and Hinton D (eds). Taylor & Francis, New York, London.
113. Krahm, M.M., M.B. Hanson, R.W. Baird, R.H. Boyer, D.G. Burrows, C.K. Emmons, J.K.B. Ford, L.L. Jones, D.P. Noren, P.S. Ross, G.S. Schorr and **T.K. Collier**. 2007. Persistent organic pollutants and stable isotope ratios in biopsy samples (2004-2006) from Southern Resident killer whales. *Marine Pollution Bulletin* 54:190-211.
 112. **Collier, T.K.**, S.M. O'Neill, J.E. West, and N.L. Scholz 2007. Toxic chemical contaminants and Puget Sound. In: Proc. 2007 Georgia Basin Puget Sound Research Conference. Available online at:
http://www.engr.washington.edu/epp/psgb/2007psgb/2007proceedings/oral_abstracts.html#12E
 111. Dickhoff, W.D., **T.K. Collier**, and U. Varanasi. 2007. The Seafood Dilemma: A Way Forward. *Guest Director's Line*. *Fisheries* 32:244-246.
 110. Johnson L. L., G. M. Ylitalo, C. A. Sloan, B. F. Anulacion, A. N. Kagley, M. R. Arkoosh, T. A. Lundrigan, K. Larson, M. Siipola and **T. K. Collier**. 2007. Persistent organic pollutants in outmigrant juvenile chinook salmon from the Lower Columbia Estuary, USA. *Science of The Total Environment*, 374:342-366.
 109. Arkoosh, M.R., A.N. Kagley, B.F. Anulacion, D.A. Bohlen, B.P. Sandford, F.J. Loge, L.L. Johnson, and **T.K. Collier**. 2007. Disease susceptibility of hatchery Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) with different juvenile migration histories in the Columbia River. *J Aquat. Animal Health* 18:223-231.
 108. Uravitch, J.A., **T.K. Collier**, E. Moore, T. Noji, L. Wenzel, S. White, and R. Zimmerman. 2006. Marine zoning and coastal management. pp 40-51. In: S.A. murawski and G.C. Matlock (eds). *Ecosystem Science Capabilities Required to Support NOAA's Mission in the Year 2020*. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-F/SPO-74, 97 p.
 107. Incardona, J.P., H.L. Day, **T.K. Collier**, and N.L. Scholz. 2006. Developmental toxicity of 4-ring polycyclic aromatic hydrocarbons in zebrafish is differentially dependent on Ah receptor isoforms and hepatic cytochrome P450 1A metabolism. *Toxicology and Applied Pharmacology*, 217:308-321.
 106. Johnson, L.L., G.M. Ylitalo, M.R. Arkoosh, A.N. Kagley, C. Stafford, J.L. Bolton, J. Buzitis, B.F. Anulacion, and **T.K. Collier**. 2006. Contaminant exposure in outmigrant juvenile salmon from Pacific Northwest estuaries. *Environ. Monitoring Assess.* 124:167-194.
 105. Bus, J.S., R.A. Canady, **T.K. Collier**, J.W. Owens, S.D. Pettit, N.L. Scholz, and A.C. Street. 2006. The extension of molecular and computational information to risk assessment and regulatory decision-making. in (W. Benson and R.T. DiGiulio, eds) *Genomic Approaches for Cross-Species Extrapolations in Toxicology*. SETAC Press, Pensacola, FL. pp 151-180.
 104. Hellou, J., **T.K. Collier**, and F. Ariese. 2006. Assessing PAH exposure in feral finfish from the Northwest Atlantic. *Marine Pollution Bulletin* 52: 433-441.

103. Scholz, N.L., N.K. Truelove, J.S. Labenia, D.H. Baldwin, and **T.K. Collier**. 2006. Dose-additive inhibition of chinook salmon acetylcholinesterase activity by mixtures of organophosphate and carbamate insecticides. *Environ. Toxicol. Chem.* 5:1200-1207.
102. Incardona, J.P., M.G. Carls, H. Teraoka, C.A. Sloan, **T.K. Collier**, and N.L. Scholz. 2005. Aryl hydrocarbon receptor-independent toxicity of weathered crude oil during fish development. *Environmental Health Perspectives* 113:1755-1762.
101. Arkoosh, M.R., D. Bohlen, C.L. Stafford, L.L. Johnson, and **T.K. Collier**. 2005. Use of disease challenge assay to assess immunotoxicity of xenobiotics in fish. In *Techniques in Aquatic Toxicology*, Vol. 2 (G. Ostrander, ed.) CRC Press, Inc. Boca Raton, FL. pp. 19-38.
100. Loge, F. J., M. R. Arkoosh, T. R. Ginn, L. L. Johnson, and **T. K. Collier**. 2005. Impact of environmental stressors on the dynamics of disease transmission. *Environ. Sci. Technol.* 39:7329-7336.
99. Baker, J.E., W. F. Bohlen, R. Bopp, B. Brownawell, **T. K. Collier**, K. J. Farley, W. R. Geyer, L. Rosman, and R. Nairn. PCBs in the Upper Hudson River: The Science Behind the Dredging Controversy. 2005, in (J. Levinton and J. Waldman, eds.) *The Hudson River Estuary*. Cambridge University Press, New York, NY. Pp349-367.
98. Elskus, A.M., **T.K. Collier**, and E. Monnosson. 2005. Interactions between lipids and persistent organic pollutants (POPs) in fish. In: *The Biochemistry and Molecular Biology of Fishes, Volume 6. Environmental Toxicology*. (T.P. Mommsen and T.W. Moon, eds). Elsevier Science.
97. Arkoosh, M.R., E. Clemons, A. Kagley, C. Stafford, A. Glass, K. Jacobson, P. Reno, M. Myers, E. Casillas, L. Johnson, F. Loge, and **T.K. Collier**. 2004. Survey of pathogens in juvenile salmon *Oncorhynchus spp.* migrating through Pacific Northwest estuaries. *Journal of Aquatic Animal Health* 16:186-196.
96. Arkoosh, M.R., L. Johnson, P. A. Rossignol and **T.K. Collier**. 2004. Predicting the impacts of perturbations on salmon communities: Implications for monitoring. *Canadian Journal of Fisheries and Aquatic Sciences* 61:1166-1175.
95. Incardona, J.P., **T.K. Collier**, and N. L. Scholz. 2004. Defects in cardiac function precede morphological abnormalities in fish embryos exposed to polycyclic aromatic hydrocarbons. *Toxicol. Appl. Pharmacol.* 196:191-205.
94. **Collier, T.K.** 2004. Guest Editor. *Mar. Environ. Res.* 58(2-5). Special issue, Proceedings of PRIMO-12. M.O. James, Guest Editor-in-Chief.
93. Jacobson, K.C., M.R. Arkoosh, A.N. Kagley, E.R. Clemons, **T.K. Collier** and E. Casillas. 2003. Cumulative effects of natural and anthropogenic stress on immune function and disease resistance in juvenile chinook salmon: *Oncorhynchus tshawytscha*. *J Aquatic Animal Health* 15:1-12.
92. Payne, J.F., Mathieu, A., and **T.K. Collier**. 2003. Ecotoxicological studies focusing on marine and freshwater fish. In: PAHs – An Ecotoxicological Perspective (P.E.T. Dauben, ed). John Wiley and Sons. pp 191-224.

91. **Collier, T.K.** and S.M. Adams. 2003. Special Issue Editors. Causal relationships between exposure and effects in field studies. *Human and Ecological Risk Assessment* 9:15-266.
90. **Collier, T.K.** 2003. Forensic ecotoxicology: Establishing causality between contaminants and biological effects in field studies. *Human and Ecological Risk Assessment* 9:259-266.
89. Myers M.S., L.L. Johnson, and **T.K. Collier**. 2003. Establishing the causal relationship between polycyclic aromatic hydrocarbon (PAH) exposure and hepatic neoplasms and neoplasia-related liver lesions in English sole (*Pleuronectes vetulus*). *Human and Ecological Risk Assessment* 9:67-94.
88. **Collier, T.K.**, L.L. Johnson, and J.P. Meador. 2002. Introduction: Fish tissue and sediment effects thresholds for polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and tributyltin. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 12:489-492.
87. Meador, J.P., **T.K. Collier**, and J.E. Stein. 2002. Use of tissue and sediment-based threshold concentrations of polychlorinated biphenyls (PCBs) to protect juvenile salmonids listed under the US Endangered Species Act. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 12:493-516.
86. Johnson, L.L, **T.K. Collier**, and J.E. Stein. 2002. An analysis in support of sediment quality thresholds for polycyclic aromatic hydrocarbons (PAHs) to protect estuarine fish. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 12:517-538.
85. Meador, J.P., **T.K. Collier**, and J.E. Stein. 2002. Determination of a tissue and sediment threshold for tributyltin to protect prey species of juvenile salmonids listed under the US Endangered Species Act. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 12:539-551.
84. Johnson L.L. and **T.K. Collier** 2002. Assessing contaminant-induced stress across levels of biological organization. In: Adams SM (ed), *Biological Indicators of Aquatic Ecosystem Stress*, pp 533-564. American Fisheries Society, Bethesda, MD, USA.
83. Arkoosh, M.R. and **T.K. Collier**. 2002. Ecological risk assessment paradigm for salmon: Analyzing immune function to evaluate risk. *Human and Ecological Risk Assessment*. 8:265-276
82. Arkoosh, M. R., E. Casillas, E. Clemons, P. Huffman, A. N. Kagley, **T.K. Collier** and J. E. Stein. 2001. Increased susceptibility of juvenile chinook salmon (*Oncorhynchus tshawytscha*) to vibriosis after exposure to chlorinated and aromatic compounds found in contaminated urban estuaries. *Journal of Aquatic Animal Health* 13:257-268.
81. Scholz N.L. and **T.K. Collier**. 2001. Endangered salmon and probabilistic risk assessments for organophosphate pesticides. *SETAC Globe* 1:32-33.
80. Stehr C.M., D.W. Brown, T. Hom, B.F. Anulacion, W.L. Reichert, and **T.K. Collier**. 2000. Exposure of juvenile chinook and chum salmon to chemical

- contaminants in the Hylebos Waterway of Commencement Bay, Tacoma Washington. *Journal of Aquatic Ecosystem Stress and Recovery* 7:215-227.
79. Arukwe, A., R. Male, L.L. Johnson, K.A. Peck-Miller, **T.K. Collier**, and A. Goksøyr. 2000. Fish zona radiata (eggshell) proteins: evaluation and validation as a biomarker for xenoestrogen monitoring. *Mar. Environ. Res.* 50:195-196.
 78. Sol, S. S., L. L. Johnson, B. H. Horness, and **T. K. Collier**. 2000. Relationship between oil exposure and reproductive parameters in fish collected following the EXXON VALDEZ oil spill. *Mar. Poll. Bull.* 40:1139-1147.
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 76. Johnson L.L., S.Y. Sol, G.M. Ylitalo, T. Hom, B. French, O.P. Olson, and **T.K. Collier**. 1999. Reproductive injury in English Sole (*Pleuronectes vetulus*) from the Hylebos Waterway, Commencement Bay, Washington. *Journal of Aquatic Ecosystem Stress and Recovery* 6:289-310.
 75. **Collier, T.K.**, K. Grodzinska, L. Lagadic, J.F. Børseth, J. Gonzalez-Lopez, A. Lebedev, and M. Leinerte. 1999. Assessing environmental quality and efficacy of remedial activities in the Upper Vistula Basin of Poland, using biomarkers. *in* Biomarkers: A Pragmatic Basis for Remediation of Severe Pollution in Eastern Europe (D.B. Peakall et al., eds.). Kluwer Academic Publishers, The Netherlands, pp. 211-227. .
 74. **Collier, T.K.** and M.S. Myers. 1999. Using biomarkers to monitor remedial actions at a subtidal estuarine site severely contaminated with polynuclear aromatic hydrocarbons. *in* Biomarkers: A Pragmatic Basis for Remediation of Severe Pollution in Eastern Europe (D.B. Peakall et al., eds.). Kluwer Academic Publishers, The Netherlands, pp. 301-304.
 73. Gallagher, E.P, K. Sheehy, P. Janssen, D.L. Eaton, and **T.K. Collier**. 1999. Isolation and cloning of homologous glutathione S-transferase cDNAs from English sole and starry flounder. *Aquat. Toxicol.* 44:171-182.
 72. Myers, M.S., C.M. Stehr, O.P. Olson, D. Boyd, C.A. Krone, B. French, B.F. Anulacion, S.M. Pierce, and **T.K. Collier**. 1998. Toxicopathic liver pathology in flatfish from the Hylebos Waterway in Tacoma, Washington. *Proc. 1998 Puget Sound Research Conference.* pp 695-711. ([http//www.wa.gov/puget_sound](http://www.wa.gov/puget_sound))
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 70. Johnson L.L., S.Y. Sol, G.M. Ylitalo, T. Hom, B. French, O.P. Olson, and **T.K. Collier**. 1998. Reproductive anomalies in bottomfish from the Hylebos Waterway. *Proc. 1998 Puget Sound Research Conference.* pp 712-722. ([http//www.wa.gov/puget_sound](http://www.wa.gov/puget_sound))

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61. Johnson, L.L., J.T. Landahl, L.A. Kubin, B.H. Horness, M.S. Myers, **T.K. Collier**, and J.E. Stein. (1998). Assessing the effects of anthropogenic stressors on Puget Sound flatfish populations. *J. Sea Res.* 39:125-137.
60. **Collier, T.K.**, L.L. Johnson, C.M. Stehr, M.S. Myers, M.M. Krahn, and J.E. Stein. (1998). Fish Injury in the Hylebos Waterway of Commencement Bay, Washington. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-36, 576 p.
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Presentations/Review panels/Sessions chaired/Conferences organized
(partial list, more than 200 total)

- Collier, T.K.** 2010. Contaminants of emerging concern in coastal and marine ecosystems. Invited presentation, Pollution 2000. Sausalito, CA. 2/23/10.
- Collier, T.K.** 2010. Impacts of copper on the sensory biology and behavior of salmon. Invited presentation, Alaska Forum on the Environment. Anchorage, AK. 2/9/10.
- Collier, T.K.** 2009. Contaminated sediments and fish health: The Bad, the Good, and the Ugly. Invited presentation, Green Sturgeon Workshop. Oakland, CA. 12/2/09.
- Collier, T.K.** 2009. Monitoring for biological effects of oil spills in sub-Arctic U.S. water: Added effects of biomarkers? Invited presentation at workshop on 'Biomarkers – what role can they play in environmental management related to oil and gas activities offshore?'. Paris, France. 11/27/09.
- Collier, T.K.** 2009. Report and conclusions from July 2009 Sousa conservation workshop. Invited presentation, Indo-Pacific Humpback Dolphin Conservation Action Plan meeting, Taipei, Taiwan. 11/1/09.
- Collier, T.K.** 2009. Sentinel species concepts in NOAA's OHHI. Invited presentation, NOAA OHHI All-PI meeting. Seattle, WA. 10/7/09.
- Collier, T.K.** 2009. Toxic chemicals and our aquatic ecosystems: how bad is it? Invited presentation, Pacific Fisheries Legislative Task Force. Astoria, OR. 9/18/09.
- Collier, T.K.** 2009. Introduction to the subject of toxic chemicals and salmon in the Columbia River. Invited presentation, Northwest Power and Conservation Council, Columbia River Estuary Science-Policy Exchange. Astoria, OR. 9/10/09.
- Collier, T.K., L.L. Johnson, and J.P. Incardona.** 2009. Environmental criteria for PAHs and implications of recent findings on aquatic animal health. Invited plenary presentation, International Society for Toxicity Assessment, 14th meeting. Metz, France. 8/31/09.
- Collier, T.K.** 2009. Polycyclic aromatic hydrocarbons (PAHs) as threats to environmental and human health. Invited plenary presentation, International Symposium on Environmental Pollution, Ecology, and Human Health. Tirupati, India. 7/26/09.
- Collier, T.K.** 2009. Opening keynote address, International Symposium on Environmental Pollution, Ecology, and Human Health. Tirupati, India. 7/25/09.
- Collier, T.K.** 2009. Working group chair, Group of experts evaluating conservation strategies for *Sousa chinensis*. Taipei, Taiwan, 7/21/09.

- Collier, T.K.** 2009. Strategies for habitat protection in coastal areas. Invited presentation (for Tom Bigford) at Symposium on Conservation Strategies for *Sousa chinensis* in Taiwan 2009. Taipei, Taiwan. 7/20/09.
- Collier, T.K.** 2009. Effect of petrochemicals on cetaceans and their prey base. Invited presentation at Symposium on Conservation Strategies for *Sousa chinensis* in Taiwan 2009. Taipei, Taiwan. 7/20/09.
- Collier, T.K.** 2009. NOAA's One Health Approach and its use in early warning systems. Invited presentation to GEO workshop on Priority Earth Observation Needs for Environmental Change and Human Health. Geneva, Switzerland. 7/10/09.
- Collier, T.K.** 2009. Environmental stressors and disease. Invited presentation to GEOSS Workshop XXVII - Health and the Environment. Geneva, Switzerland. 7/7/09.
- Collier, T.K.** 2009. Presented testimony on "Effects of endocrine disrupting compounds on fish and wildlife" before U.S. House of Representatives Subcommittee on Insular Affairs, Oceans, and Wildlife. Washington, DC. 6/09/09.
- Collier, T.K.** 2009. Session chair, Ecological Relevance, at PRIMO-15, Bordeaux, France. 5/19/09.
- Collier, T.K., D.A. Baldwin, J.A. Spromberg, M.R. Arkoosh, L.L. Johnson, S. Hecht, and N.L. Scholz** 2009. Linking contaminant-associated reductions in fish health to impaired population viability, in order to turn PRIMO into action. Platform presentation at PRIMO-15, Bordeaux, France. 5/19/09.
- Collier, T.K.** 2009. Co-organizer of workshop "Chemicals of emerging concern" in Costa Mesa, CA. 4/27-29/09.
- Collier, T.K.** 2009. Linking contaminant-associated reductions in fish health to impaired population viability, in order to support management actions. Invited presentation, annual meeting of Pacific Northwest Chapter of SETAC. Port Townsend, WA. 4/18/09.
- Collier, T.K.** 2009. Organizer (in conjunction with NOS), Contaminants of Emerging Concern (CEC) Workshop: Adapting NOAA monitoring and research to address CEC management in coastal, marine, and Great Lakes environments. Costa Mesa, CA. 3/11-12/09.
- Collier, T.K.** 2009. Developing programs to ensure seafood safety and enhance human health: A U.S. perspective. Invited seminar, Symposium on Recent Trends in Environmental Pollution and Impacts. Burapha University, Chonburi, Thailand. 3/4/09.
- Collier, T.K.** 2009. Fish health, from mechanistic studies to population models, as a tool for assessing impacts of chemical contaminants. Invited seminar, Symposium on Recent Trends in Environmental Pollution and Impacts. Burapha University, Chonburi, Thailand. 3/4/09.
- Collier, T.K.** 2009. Invited review panel member, Hudson River Foundation. New York, NY. 2/12/09.

- Collier, T.K.** 2009. Toxic chemicals in the biota of the Salish Sea. Session chair, Puget Sound/Georgia Basin research conference. Seattle, WA. 2/10/09.
- Collier, T.K.** 2009. Activities and capabilities of environmental and human health programs at the Northwest Fisheries Science Center. Invited presentation, A One Health Approach? Integrating NOAA's Marine Organism and Human Health Related Data for Use in Early Warning Systems. Silver Spring, MD. 2/3/09.
- Collier, T.K.** 2009. Fish health, from mechanistic studies to population models, as a tool for assessing impacts of chemical contaminants. Invited seminar, National Institute for Environmental Studies, Center for Environmental Risk Research, Tsukuba, Japan. 1/14/09.
- Collier, T.K.** 2009. Fish health, from mechanistic studies to population models, as a tool for assessing impacts of chemical contaminants. Invited departmental seminar, Hopkins Marine Station, Pacific Grove, CA 1/9/09.
- Collier, T.K.** 2009. Toxic stormwater runoff: impacts on salmon in Seattle creeks. Invited presentation to the Seattle City Council. Seattle, WA 1/5/09.
- Collier, T.K.** 2008. Developing programs to ensure seafood safety and enhance human health: A U.S. perspective. Invited lecture, KORDI/AMETEC. Biochemical responses of fish to oil spills and other marine pollutants. Geoje Island, Korea. 11/4/08.
- Anulacion, B.F., S.Y. Sol, and **T.K. Collier**. 2008. Obtaining high quality environmental samples. Invited lecture, KORDI/AMETEC. Biochemical responses of fish to oil spills and other marine pollutants. Geoje Island, Korea. 11/3/08.
- Collier, T.K.** 2008. The impacts of oil spills on both wild and cultured marine organisms. Invited lecture, KORDI/AMETEC. Biochemical responses of fish to oil spills and other marine pollutants. Geoje Island, Korea. 11/3/08.
- Collier, T.K.** 2008. Workshop organizer. KORDI/AMETEC. Biochemical responses of fish to oil spills and other marine pollutants. Geoje Island, Korea. 11/2-14/08.
- Collier, T.K.** 2008. Developing programs to ensure seafood safety and enhance human health: A U.S. perspective. Invited seminar, Ås, Norway. 10/20/08.
- Collier, T.K.** 2008. The effects of chemical contaminants on fish habitats, fish health, and fish populations. Invited seminar, Marine Environmental Laboratory, Int'l Atomic Energy Administration. Monaco. 10/15/08.
- Collier, T.K.** 2008. External opponent, Ph.D. defense for Tomas Hansson, Stockholm University. Stockholm, Sweden. 10/3/08.
- Collier, T.K.** and L.L. Johnson. 2008. Toxic chemical contaminants and salmon in the Columbia River. Invited presentation to the Northwest Power and Conservation Council. Kalispell, MT. 7/15/08.
- Collier, T.K.** 2008. Working together to protect human and environmental health from toxic chemicals. Invited presentation, Society of American Indians in Government, 5th Annual Training Conference. Traverse City MI. 6/4/08.
- Collier, T.K.** 2008. Overview of NOAA's Oceans and Human Health Initiative and the West Coast Center for Oceans and Human Health. Invited presentation, Society

- of American Indians in Government, 5th Annual Training Conference. Traverse City MI. 6/4/08.
- Collier, T.K.** 2008. Recent findings on algal toxins, organic chemicals, and marine mammal health (with some chemical ecology for dessert). Invited 'brown bag' seminar, NOAA Fisheries Office of Protected Resources, Silver Spring, MD. 5/28/08.
- Collier, T.K.** 2008. Session chair, Oil Spills and Aquaculture. World Aquaculture 2008. Busan, Korea. 5/23/08.
- Collier, T.K.** 2008. The impacts of oil spills on both wild and cultured marine organisms. Invited keynote speaker, World Aquaculture 2008. Busan, Korea. 5/23/08.
- Collier, T.K.** 2008. Breakout group lead for discussion of NOAA Climate Change priorities. Invited participant at NOAA Climate Change and LMR workshop. Seattle, WA. 5/14/08.
- Collier, T.K.** 2008. Toxic chemical contaminants and Puget Sound. Invited presentation at Puget Sound Symposium hosted by CH2M Hill, Bellevue, WA. 4/16/08.
- Collier, T.K.** 2008. Group lead for discussion of NMFS Habitat Science initiative. Invited participant at NMFS' national meeting of Assistant Regional Administrators for Habitat. Silver Spring, MD. 4/8/08.
- O'Neill, S.M and **Collier, T.K.** 2008. Selecting provisional environmental indicators to determine progress in protecting and restoring the Puget Sound ecosystem. Invited presentation to the Leadership Council of the Puget Sound Partnership. 3/26/08.
- Collier, T.K.** 2008. Invited participant, Water Environment Research Foundation sponsored workshop: Developing a cross-sector research collaboration to address trace organics in receiving water. Alexandria, VA. 3/12-13/08.
- Collier, T.K., W.W. Dickhoff, and U. Varanasi.** 2008. The seafood dilemma: A way forward. Invited presentation in Oceans and Human Health session, Ocean Sciences 2008. Orlando, FL, 3/3/08.
- Collier, T.K.** 2008. Fish health, from mechanistic studies to population models, as a tool for assessing effects of chemical contaminants and other stressors. Invited conference keynote address, 37th annual meeting of the Interagency Ecological Program. Asilomar, CA, 2/27/08.
- Collier, T.K.** 2008. Invited review panel member, National Oceans and Human Health external grants review panel. Arlington, VA. 2/20-22/08.
- Collier, T.K.** 2008. Working our way up the biological scale from biomarkers to population dynamics: effects of pesticides on fish. Guest lecturer, Environmental Health 590, University of Washington, Seattle, WA. 2/13/08.
- Collier, T.K. and S.M. O'Neill.** 2008. Selecting provisional environmental indicators to determine progress in protecting and restoring the Puget Sound ecosystem. Invited presentation to the Ecosystem Coordination Board of the Puget Sound Partnership. 2/8/08.

- O'Neill, S.M and **Collier, T.K.** 2008. Selecting provisional environmental indicators to determine progress in protecting and restoring the Puget Sound ecosystem. Invited presentation to the Leadership Council of the Puget Sound Partnership. 1/28/08.
- Collier, T.K.** D. Baldwin, C. Laetz, J. Incardona, J. Spromberg, and N. Scholz. 2007. Assessing the effects of pesticides, singly and in combination, on fish health and fish populations. Invited conference keynote presentation, "Modern Agriculture: Issues and the Way Forward". Kuala Lumpur, Malaysia. 12/5/07.
- Collier, T.K.,** W.W. Dickhoff, and U. Varanasi. 2008. The seafood dilemma: A way forward. Invited presentation at OHH All P-I Annual Meeting, Muskegon, MI. 10/23/07.
- Collier, T.K.** and S.M. O'Neill. 2007. Protecting estuaries from toxic contaminants: What role is there for Biological Observing Systems (BiOS)? Invited presentation at 2007 State of the Estuary Conference, Oakland, CA, 10/18/07.
- Collier, T.K.** 2007. Considerations for use and/or removal of creosote-treated wood along the shoreline of Bainbridge Island, WA. Invited presentation at public town hall meeting by the City of Bainbridge Island. Bainbridge Island, WA. 10/15/07.
- Collier, T.K.,** G.M. Ylitalo, and M.M. Krahn. 2007. Chemical contaminants and southern resident killer whales (*Orcinus orca*). Invited presentation at *12th Annual Symposium/Workshop on Cetacean Ecology and Conservation. Threats and Strategies: Reflections of the Year of the Dolphin*. Taipei, Taiwan. 10/9/07.
- Collier, T.K.,** Assessing seafood safety in the aftermath of Hurricane Katrina. Invited presentation, AFS Special Symposium *Mitigating impacts of natural disasters on fisheries ecosystems*. 137th Annual Meeting, American Fisheries Society, San Francisco, CA. 9/5/07.
- Collier, T.K.** 2007. Restored urban streams in the Pacific Northwest as indicators of ecosystem health. Invited presentation, Fort Johnson Seminar Series. Charleston, SC. 8/31/07.
- Collier, T.K.** 2007. Putting the 'eco' into ecotoxicology. Invited presentation, Hollings Marine Laboratory Brown Bag Seminar Series. Charleston, SC. 8/30/07.
- Collier, T.K.** 2007. Urbanizing coastal streams in the Pacific Northwest as sentinel habitats. Invited presentation, Coastal Zone '07. Portland, OR. 7/26/07.
- Collier, T.K.** 2007. Session chair, Oceans and Human Health. Coastal Zone '07. Portland, OR. 7/23/07.
- Collier, T.K.** 2007. Pesticides and Pacific salmon: linking exposure to physiology, behavior, growth, survival, and long-term productivity. 14th Symposium on Pollutant Responses in Marine Organisms PRIMO-14. Florianopolis, Brazil. 5/9/07.
- Collier, T.K.** 2007. Session chair (with Sue Codi), Endocrine Disruption and Biological Modeling. 14th Symposium on Pollutant Responses in Marine Organisms PRIMO-14. Florianopolis, Brazil. 5/9/07.

- Collier, T.K.** 2007. National Core Coastal Indicators Workshop. Invited participant and breakout group (Water Quality) rapporteur. Linthicum Heights, MD. 5/1-3/07.
- Collier, T.K.,** S.M. O'Neill, J.E. West, and N.L. Scholz. 2007. Toxic chemical contaminants and Puget Sound. 2007 Georgia Basin/Puget Sound Research Conference. Vancouver, BC. 3/29/07.
- Collier, T.K.** 2006. Establishing programs to ensure seafood safety and enhance human health. Invited keynote address, 2006 Qingdao Symposium on Marine Environmental Monitoring. 11/10/06.
- Collier, TK.,** F.J. Loge, M.R. Arkoosh, L.L. Johnson, and T.R. Ginn. 2006. Increased disease-induced mortalities in outmigrant salmon due to environmental stressors. VIIth International Congress on the Biology of Fish, St. John's, Newfoundland. 7/22/06.
- Collier, TK.** 2006. Fish health, from mechanistic studies to population models, as a tool for assessing effects of chemical contaminants. Invited presentation, VIIth International Congress on the Biology of Fish, St. John's, Newfoundland. 7/20/06.
- Collier, TK.** 2006. Course Organizer. Methods and strategies for conducting environmental assessments in developing economies. AMETEC Training Course, Geoje Island, Korea. 6/12-6/22/06.
- Collier, TK.** 2006. Connecting ecosystems to human health in Puget Sound. Invited speaker, Puget Sound Toxics Forum, Seattle, WA. 4/5/06.
- Collier, TK.** 2006. Using modeling and empirical data to estimate population level effects from sub-lethal stress. Invited seminar, San Francisco Estuary Institute, Oakland, CA. 3/14/06.
- Collier, TK.** 2006. Using biology to assess the effectiveness of remediation and restoration activities. Invited presentation, Assoc. State and Territorial Solid Waste Management Officials. San Francisco, CA. 3/14/06.
- Collier, TK.** 2006. Assessing seafood safety after Hurricane Katrina: Is there a role for OHHI in environmental emergencies? Invited presentation, OHH Principal Investigators Meeting. Charleston, SC. 1/19/06.
- Collier, TK.** 2006. Sentinel species concepts in NOAA's WCCOHH Program. Invited presentation, OHH Principal Investigators Meeting. Charleston, SC. 1/19/06.
- Collier, TK.** 2005. Effects of Hurricane Katrina on fisheries in the northern Gulf of Mexico. Invited speaker and panelist for special session 'The Science of Environmental Catastrophes: 2005, the Year of the Hurricane'. SETAC National Conference, Baltimore MD 11/16/05.
- Johnson LL, OP Olson, GY Ylitalo, C Rice, and **TK Collier.** 2005. Fish habitat use and chemical contaminant exposure at restoration sites in Commencement Bay, Washington. Interactive presentation by Tracy Collier. SETAC National Conference, Baltimore MD 11/15/05.
- Collier, TK.** 2005. Effects of land-based runoff on the health of anadromous and marine fish: From Seattle rain to hurricanes. Invited presentation. APEC Symposium,

- Protection of the Marine Environment from Land-based Sources of Pollution. Busan, Korea. 11/3/05.
- Collier TK.** 2005. Session chair. Contaminants, Oceans, and Human Health. Estuarine Research Federation Annual Meeting, Norfolk, VA. 10/18/05.
- Incardona, **TK Collier**, and NL Scholz. 2005. Invited presentation. Estuarine Research Federation Annual Meeting, Norfolk, VA. 10/18/05.
- Collier, T.K.,** BF Anulacion, SY Sol, GM Ylitalo, and LL Johnson. 2005. PAH-induced impairment of fish health in Kitimat Arm, BC: Contaminant sources vs contaminant effects. Invited presentation. Estuarine Research Federation Annual Meeting, Norfolk, VA. 10/18/05.
- Loge, F, MR Arkoosh, T Ginn, LL Johnson, **TK Collier**. 2005. Impact of environmental stressors on the dynamics of disease transmission. Invited presentation, presented by **TK Collier**. Estuarine Research Federation Annual Meeting, Norfolk, VA. 10/17/05.
- Add NorCal SETAC plenary 5/3/05**
- Collier, T.K.** (2005). Assessing the effects of storm runoff on fish and their ecosystems. Presented at Coastal Storms Project Final Wrap-up and Constituent Outreach workshops, in Jacksonville and Daytona Beach, FL 1/25 and 1/26/05.
- Collier, T.K.** (2004). Toxic chemicals affect both ocean ecosystems and human health. Invited departmental seminar. Xiamen University, Department of Chemistry. Xiamen, Fujian, China. 12/10/04.
- Collier, T.K.** (2004). Environmental monitoring for toxic chemicals in aquatic ecosystems. Short course taught at Xiamen University, Department of Chemistry. Xiamen, Fujian, China. 12/8-9/04.
- Collier, T.K.** (2004). Session chair. Water quality restoration in and around the built environment. 2nd National Conference on Coastal and Estuarine Habitat Restoration. Seattle, WA 9/14/04.
- Collier, T.K.** (2004). Northwest Fisheries Science Center research in Puget Sound. Seminar presented to NOAA's Chesapeake Bay Office, Annapolis, MD 8/24/04.
- Collier, T.K.** (2004). Impacts of oil and dispersants on NOAA trust resources. Presented at NOAA Dispersants Summit, Washington DC 7/27/04.
- Collier, T.K.** (2004). Current aquatic toxicology issues related to Superfund site management decisions. Presented to USEPA Region IX Biological Technical Assessment Group, Oakland, CA 7/21/04.
- Collier, T.K.** (2004). Workgroup co-chair. "Extension of molecular and computational information to risk assessment and regulatory decision-making". Pellston Workshop sponsored by SETAC/SOT "Emerging Molecular and Computational Approaches for Cross-Species Extrapolations". Portland, OR 7/18-7/23/04.
- Collier, T.K.** (2004). Modern approaches for linking contaminant exposure to meaningful biological endpoints. Presented at APEC workshop "Modern Approaches to Linking Exposure to Toxic Compounds and Biological Effects". Brisbane, Australia. 7/13/04.

- Collier, T.K.** (2004). Co-organizer, "Modern Approaches to Linking Exposure to Toxic Compounds and Biological Effects". Workshop sponsored by Asia-Pacific Economic Cooperation, Brisbane, Australia. 7/10-7/17/04.
- Collier, T.K., J.P. Meador, and N.L. Scholz** (2004). Toxicology issues associated with the use of treated wood in surface waters. Presented at a workshop entitled 'Use and permitting of treated wood in the San Francisco estuary', sponsored by the Bay Planning Coalition. Oakland, CA 6/3/04.
- Collier, T.K.** (2004). Overview of NWFSC research plans under NOAA's Oceans and Human Health Initiative. Presented to NOAA OHH workshop, Silver Spring, MD. 5/4/04.
- Collier, T.K.** (2004). ECD capabilities for environmental assessments and seafood safety research. Presented to Tsleil-Waututh First Nation and EcoTrust. Seattle, WA. 4/27/04.
- Collier, T.K.** (2004). Effects of oil on fisheries: Lessons from the EXXON Valdez and beyond. Symposium Plenary Address, 11th Symposium, Sample Handling for Environmental and Biological Analysis. Baiona, Spain, April 19, 2004.
- Collier, T.K.** (2004). Session chair, Special Session on the Prestige Oil Spill. 11th Symposium, Sample Handling for Environmental and Biological Analysis. Baiona, Spain, April 19, 2004.
- Collier, T.K.** (2004). Overview of ECD research pertinent to natural resource injury assessment in Portland Harbor. Presented to Portland Harbor Trustees. April 8, 2004.
- Collier, T.K.** (2004). Toxic chemicals and endangered species. Invited departmental seminar at Duke University. Durham, NC, 2/27/04.
- Collier, T.K., L.L. Johnson, M.R. Arkoosh, N.L. Scholz, and J.P. Meador** (2004). Toxic contaminants in PNW estuaries, and effects on Pacific salmon. Invited presentation, Annual Meeting of Oregon Chapter, AFS. Sunriver, OR, 2/18/04.
- Collier, T.K.** (2004). Endocrine disruption and developmental abnormalities: 'New' toxicology threats for estuarine fish. Invited presentation at CALFED Workshop 'Contaminant Stressors in the Bay-Delta Watershed'. Sacramento, CA. 2/4/04
- Collier, T.K. J Labenia, MS Myers, JA Spromberg, and NL Scholz** (2004). Prespaw mortality in adult coho salmon: Interaction between urban environments and weather. Invited presentation at 2004 national meeting of the American Meteorological Society, Symposium on 'The Nexus Between Urban and Coastal Environments'. Seattle, WA. 01/14/04.
- Collier, T.K.** (2003). Session organizer and chair (with S. Marshall Adams). Making Ecotoxicology Studies Relevant: The 'So What' Question. SETAC North America conference, Austin, TX. 11/12/03.
- Collier, T.K. J.S. Labenia, J.A. Spromberg, N.L. Scholz** (2003). Prespaw mortality in coho salmon of hatchery origin: So what? Invited presentation at SETAC North America conference, Austin, TX. 11/11/03.
- Collier, T.K.** (2003). Session organizer and chair (with Jocelyne Hellou). Predicting Field Effects of PAHs from Laboratory Studies. SETAC North America

- conference, Austin, TX. 11/11/03.
- Collier, T.K.** (2003). Salmon Toxicology 101. Invited presentation at NW Salmon Recovery Conference. Seattle, WA 11/05/03.
- Collier, T.K.** (2003). Possible management actions for dealing with contaminant loads in southern resident killer whales. Presented at 'Disease, Pollution and Contaminants: A Workshop to Discuss Management Measures for Puget Sound Killer Whales'. Seattle, WA 10/24/03
- Collier, T.K.** (2003). Endocrine disruption and developmental abnormalities: 'New' toxicology threats for estuarine fish. Invited plenary presentation at 6th Biennial State of the Estuary Conference, Oakland, CA 10/21/03.
- Collier, T.K.** (2003). Do toxic chemicals limit the productivity of aquatic ecosystems? Invited departmental lecture at University of Stockholm, Stockholm, Sweden. 10/1/03.
- Collier, T.K.** and G.M. Ylitalo. (2003). Chemical contaminants in cultured fish: Risks, perceptions, and precautions. Invited lecture at Norges Landbrukshøgskole, Ås, Norway. 9/29/03.
- Collier, T.K.** and G.M. Ylitalo. (2003). Invited short course on seafood as a source of contaminant exposure for Native Americans. Presented at Water Quality Training course sponsored by Northwest Environmental Training Center, Randle, WA, 9/17/03.
- Collier, T.K.** and M.R. Arkoosh (2003). Contaminant effects on immune function of endangered fish. Invited platform presentation, 133rd American Fisheries Society Annual Meeting. Quebec City, Quebec, Canada. 8/13/03.
- Collier, T.K.** (2003). Ecotoxicology at the Northwest Fisheries Science Center. AMS-NOAA Teacher Workshop, NWFSC, Seattle, WA 6/26/03.
- Collier, T.K.** (2003). Ecotoxicology at the Northwest Fisheries Science Center. Kenmore Senior tour group. NWFSC, Seattle, WA 6/24/03.
- Collier, T.K.** (2003). Presentation to student orientation session for NOAA's Educational Partnership Program. Seattle, WA. 6/10/03
- Collier, T.K.** J Labenia, MS Myers, GM Ylitalo, and NL Scholz (2003). Extreme PRIMO – Premature mortality of adult coho salmon associated with stormwater discharges. Platform presentation, PRIMO 12. Safety Harbor, FL. 5/9/03.
- Collier, T.K.** (2003). Determining tissue and sediment effects thresholds for protecting aquatic species from harmful effects of toxic contaminants (PAHs, TBT, PCBs). Invited lecture, PRIMO 12 Short Course on Aquatic Toxicology. Safety Harbor, FL. 5/9/03.
- Collier, T.K.** (2003). Do toxic chemicals limit the productivity of our aquatic ecosystems? Invited departmental seminar. Alfred Wegener Institute for Polar and Sea Research. Bremerhaven, Germany. 4/25/03.
- Ylitalo, G.M., J. Buzitis, K. Lynch, L. Reed, S.M. O'Neill, J.E. West, M.M. Krahn, and **T.K. Collier.** (2003). Recent exposure of adult coho salmon from Puget Sound to polycyclic aromatic hydrocarbons. Puget Sound/Georgia Basin Research Conference.

- Collier, T.K.** (2003). Lessons from the T/V Prestige oil spill in Galicia, Spain. Invited lecture for 'Science of Oil Spills' course, HAZMAT/ORR. Seattle, WA 3/20/03.
- Collier, T.K.** (2003). Toxic contaminants and environmental fish health. Invited presentation to the Columbia River Intertribal Fisheries Commission Water Quality Workshop. Warm Springs Indian Reservation. 3/14/03.
- Collier, T.K.** (2003). Pre-spawn mortality in Pacific salmon on the northwest coast of North America. Invited departmental seminar, Oregon State University, Corvallis, OR 3/5/03.
- Collier, T.K.** (2003). A traditional Thanksgiving on the Spanish coast—response to the Prestige oil spill. ECD seminar series, Seattle, WA. 1/26/03.
- Collier, T.K.** (2002). Member of US Delegation to assist in response to T/V Prestige oil spill. La Coruña, Spain. 11/26/02-12/06/02.
- Collier, T.K.** (2002). Salmon, pesticides, and other toxic compounds. Invited presentation to the Pacific Fisheries Legislative Task Force. Catalina Island, CA. 11/23/02.
- Collier, T.K.** and L.L. Johnson (2002). Assessing effects of PAH contamination in a marine system and communicating risk across cultures. Presented at SETAC, Salt Lake City UT. 11/17/02.
- Collier, T.K.** (2002). Conference organizer. Workshop on Modern Approach to Linking Exposure to Toxic Compounds and Biological Health Ansan, Korea. 9/02.
- Collier, T.K.** (2002). Linking exposure to toxic compounds to impaired biological health of Pacific salmon. Invited presentation. Ansan, Korea. 9/02.
- Collier, T.K.** (2002). Determining causality between contaminant exposure and biological responses in field studies in the marine environment. Invited presentation. Ansan, Korea. 9/02.
- Collier, T.K.** (2002). Conference organizer. Workshop on PCBs in the Puget Sound/Georgia Basin ecosystem. Sponsored by PNWSETAC, NOAA, and USEPA. Friday Harbor, WA 9/02.
- Collier, T.K.** (2002). Chemical habitat quality and salmon health. Invited speaker. Independent Multidisciplinary Science Team. Corvallis, OR. 5/20/02.
- Collier, T.K.** (2002). Chemical contaminants and salmon health: Issues for the Willamette River. Invited speaker. Pacific Northwest SETAC annual meeting. Portland, OR. 5/18/02.
- Collier, T.K.** (2002). Effects of contaminated sediments on marine and estuarine animals. Invited speaker. Pacific Estuarine Research Society. Portland, OR 5/3/02.
- Collier, T.K.** (2002). Polycyclic aromatic hydrocarbons in the aquatic environment: Still an emerging issue after 25 years? Invited departmental seminar, UC Riverside, Riverside, CA. 4/24/02.
- Collier, T.K.** (2002). Overview of Ecotoxicology and Environmental Fish Health Program. Presented at NWFSC/CIMRS collaboration planning meeting. Newport, OR. 4/3/02.

- Collier, T.K.** (2002). Chemical habitat quality and salmon health. Invited speaker. Salmonid Restoration Federation Annual Meeting. Ukiah, CA. 2/28/02.
- Collier, T.K.** (2002). Panel reviewer. CALFED Ecosystem Restoration Program. Davis CA. 2/25-2/27/02.
- Collier, T.K.** (2000). Review of NOAA/NMFS white papers on sediment and tissue thresholds for chemical contaminants. Invited speaker at PNWSETAC Annual meeting. Lacey, WA. 5/11/00.
- Collier, T.K.** (2000). After listing, then what? The salmon recovery process. Presentation at ECD Science Forum, 5/24/00.
- Collier, T.K.** (1999). The science of contaminated sediments. Invited presentation at Northwest Regional Conference on Contaminated Sediments. Portland, OR. June 24, 1999.
- Collier, T.K.** (1998). Hosted NMFS National Habitat Managers meeting, Seattle, WA. 10/5-10/8/98.
- (presentations not consistently updated between 1997 and 2002)
- Collier, T.K.** (1997). Conference organizer. 3rd Annual Conference on Fisheries, Habitat, and Pollution. Charleston, SC. 11/6-11/8/97.
- Collier, T.K.** (1997). Invited participant and rapporteur, NATO Advanced Regional Study Workshop. Biomarkers: A Pragmatic Basis for Remediation of Severe Pollution in Eastern Europe. Cieszyn, Poland. September 20-25, 1997.
- Collier, T.K.** (1997). Session chair, Xenobiotic transformation enzymes. Ninth Int'l Symposium on Pollutant Responses in Marine Organisms, Bergen, Norway, 4/28/97.
- Myers, M.S., B. French, W.L. Reichert, M.L. Willis, B.F. Anulacion, **T.K. Collier**, and J.E. Stein. (1997). Reductions in CYP1A expression and hydrophobic DNA adducts concentration in liver neoplasms in English sole: Further evidence supporting the "resistant hepatocyte" model of hepatocarcinogenesis in this species. Presented at Ninth Int'l Symposium on Pollutant Responses in Marine Organisms, Bergen, Norway, 4/28/97.
- Anulacion, B.F., M.S. Myers, M.L. Willis, and **T.K. Collier**. (1997). Quantitation of CYP1A expression in two flatfish species showing different prevalences of contaminant-induced hepatic disease. Presented at Ninth Int'l Symposium on Pollutant Responses in Marine Organisms, Bergen, Norway, 4/28/97.
- Collier, T.K.**, L.L. Johnson, C.M. Stehr, M.S. Myers, and J.E. Stein. A comprehensive assessment of the impacts of contaminants on fish from an urban waterway. Presented at 9th Int'l Symposium on Pollutant Responses in Marine Organisms, Bergen, Norway, 4/30/97.
- Collier, T.K.** Injury endpoints in natural resource damage assessment: A case study. Invited paper and panel discussion at ASTM-sponsored Seventh Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment. St. Louis, MO. 4/9/97.

- Anulacion, B.F., B.D. Bill and **T.K. Collier** (1996). Stability of cytochrome P4501A-associated enzyme activity in frozen tissue specimens from teleosts. Presented at 17th Annual Meeting SETAC, 11/96, Washington, DC.
- Collier, T.K.**, B.F. Anulacion, B.D. Bill, and A. Goksøyr (1996). Hepatic CYP1A in winter flounder along the Eastern seaboard: Results from seven years of monitoring. Presented at 17th Annual Meeting SETAC, 11/96, Washington, DC.
- Collier, T.K.**, L.L. Johnson, M.S. Myers, and J.E. Stein (1996). The ecotoxicological consequences of increasing urbanization of coastal areas. Presented at Int'l Symposium on Environ. Chem. and Toxicol., 7/15/96. Sydney, Australia.
- Collier, T.K.** (1996). The ecotoxicological consequences of increasing urbanization of coastal areas. Invited Faculty Seminar, presented at the Royal Melbourne Institute of Technology. 7/11/96, Melbourne, Australia.
- Collier, T.K.** (1996). Invited Departmental Seminar, presented at the Royal Melbourne Institute of Technology. 7/12/96, Melbourne, Australia.
- Anulacion, B.F., T. Hom, W.L. Reichert, and **T.K. Collier**. (1995). Temporal changes in CYP1A, DNA adducts, and contaminant residues in fish removed from contaminated sites. Presented at 2nd SETAC World Congress, Vancouver, B.C. November 9, 1995.
- Collier, T.K.** (1996). Injuries to natural resources in the Duwamish River. Presentation to Elliott Bay Natural Resource Trustees and the Boeing Company. Seattle, WA, 11/6/96.
- Collier, T.K.** (1996). **Session chair.** Processes of contaminant cycling. Fifth Annual Meeting of the North Pacific Marine Science Organization (PICES). Nanaimo, B.C. October, 1996.
- Collier, T.K.** (1995). National review panel member for five year review of Puget Sound Ambient Monitoring Program. Seattle, WA. 9/26-9/28/95.
- Collier, T.K.** (1995). Biological indicators of oil exposure and effects in vertebrate species. Presentation to State of Alaska personnel responsible for Natural Resource Injury and Damage Assessment. Presented at request of NOAA's Damage Assessment Center. Anchorage, AK. 9/27/95.
- Collier, T.K.** (1995). NOAA's restoration research program, problems, and goals: Providing a scientific framework for restoration. Presented at the First Annual Northwest Natural Resource Damages Conference. Bellevue, WA. 9/21/95.
- Collier, T.K.** (1995). Biological indicators of contaminant exposure and effects. Presentation to Oregon and Washington personnel responsible for Natural Resource Injury and Damage Assessment. Presented at request of NOAA's Damage Assessment Center. Seattle, WA. 9/18/95.
- Collier, T.K.** (1995). The science of habitat restoration. Lecture presented at Seabeck Annual Adult Education/Family Retreat seminar series. Seabeck, WA. 7/27/95.
- Collier, T.K.** (1995). Salmon issues in the Pacific Northwest. Lecture presented at Seabeck Annual Adult Education/Family Retreat seminar series. Seabeck, WA. 7/26/95.

- Collier, T.K.** (1995). Marine mammal issues facing the National Marine Fisheries Service. Lecture presented at Seabeck Annual Adult Education/Family Retreat seminar series. Seabeck, WA. 7/25/95.
- Collier, T.K.** (1995). The EXXON Valdez oil spill: an example of NWFSC science in action. Lecture presented at Seabeck Annual Adult Education/Family Retreat seminar series. Seabeck, WA. 7/24/95.
- Collier, T.K.** (1995). Assessing the efficacy of remediation of contaminated estuarine sediments. **Keynote address** at joint meeting of Pacific Estuarine Research Society and Pacific Northwest Society of Environmental Toxicology and Chemistry. Seattle, WA. 5/12/95.
- Collier, T.K.** (1995). Presentation to Hylebos Waterway/Commencement Bay Trustees on preliminary results of fish injury assessments and proposal for continued work. Tacoma, WA. 4/11/95.
- Collier, T.K., LL Johnson, MS Myers, E Casillas, JE Stein, and U Varanasi** (1995). Incorporation of biomarkers into ecological risk assessments of contaminated nearshore marine habitats. Invited paper at ASTM-sponsored Fifth Symposium on Environmental Toxicology and Risk Assessment: Biomarkers and Risk Assessment. Denver, CO. 4/5/95.
- Collier, T.K., LL Johnson, MS Myers, E Casillas, JE Stein, and U Varanasi** (1995). Incorporation of biomarkers into ecological risk assessments of contaminated nearshore marine habitats. Presented at PRIMO-8, Monterey, CA. 4/3/95.
- Collier, T.K.,** (1995). **Session Chair.** Xenobiotic biotransformation enzymes: Molecular Biological Aspects. PRIMO-8, Monterey, CA. 4/3/95.
- Gallagher, E.P., P.L. Stapleton, **T.K. Collier,** U. Varanasi, and D.L. Eaton. (1995). Biochemical and molecular characterization of glutathione S-transferase expression in English sole and starry flounder. PRIMO-8, Monterey, CA. 4/3/95.
- Collier, T.K.** 1995. Incorporation of biomarkers into ecological risk assessments of contaminated nearshore marine habitats. Presented at 1995 Marine Ecosystem Monitoring Network Meeting, Nanaimo, B.C. 3/29/95.
- Collier, T.K.** (1995). Presentation to Washington State Dept. of Ecology staff on use of biomarkers and screening methods for performing environmental assessment. Olympia, WA, 3/9/95.
- Collier, T.K.** (1995). Participant in South Florida Coastal Ocean Ecosystem Workshop. Miami, FL. 2/27-2/28/95.
- Collier, T.K.** (1995). Use of flatfish for monitoring Alyeska ballast water treatment plant in Valdez, AK. Invited participant at meeting between Prince William Sound RCAC, Alyeska, and USEPA. Seattle, WA, 1/18/95.
- Anulacion, B.F., M.S. Myers, M.L. Willis, and **T.K. Collier.** (1994). Quantitation of immunohistochemically localized CYP1A in two flatfish species showing different prevalences of contaminant-induced neoplasia. Presented at PANWAT Annual Meeting, Newport, OR, 10/8/94.
- Anulacion, B.F., M.S. Myers, M.L. Willis, and **T.K. Collier.** (1994). CYP1A expression in two flatfish species showing different prevalences of contaminant-induced

- hepatic disease. Presented at Int'l Symposium on Aquatic Animal Health, Seattle, WA. 9/7/94.
- Myers, M.S., L. L. Johnson, O.P. Olson, C. M. Stehr, M.L. Willis, **T.K. Collier**, B. B. McCain, S.-L. Chan, and U. Varanasi. (1994). Relationships between toxicopathic hepatic lesions and exposure to chemical contaminants in marine Bottomfish species from the Northeast and Pacific Coasts of the United States. Presented at Int'l Symposium on Aquatic Animal Health, Seattle, WA. 9/6/94.
- Collier, T.K.** (1994). Remediation of contaminated subtidal sediments: How do we proceed? Invited keynote address at 3rd International Marine Biotechnology Conference. Tromsø, Norway. 8/11/94.
- Collier, T.K.** and L.J. Field. (1994). Eagle Harbor: A case study for remediation of a subtidal Superfund site. Presented at 6th Annual Superfund Environmental Evaluation Workshop. Boston, MA 4/28/94.
- Collier, T.K.**, J.E. Stein, A. Goksøyr, M.S. Myers, J.W. Gooch, R.J. Huggett, and U. Varanasi. (1994). Biomarkers of PAH exposure and effects in fish from the Elizabeth River, Virginia. Presented at 6th Annual Superfund Environmental Evaluation Workshop. Boston, MA 4/27/94.
- Collier, T.K.** (1994). Participant at NOAA Science Review for Coastal Ecosystem Health. Miami, FL. 4/19-4/22/94.
- Reichert, W. L., M. S. Myers, B. French, **T. K. Collier**, J. E. Stein, and U. Varanasi. (1994). Molecular epizootiology: Relationships among hepatic DNA adducts, cytochrome P4501A levels and lesions involved in hepatic neoplasia in marine fish. Presented at 85th Annual Meeting of the American Association for Cancer Research in vol 35 of the AACR Proceedings pg 102 , Abstract #607
- Collier, T.K.** (1994). Invited participant at Implementation Management Structure workshop for designing ecosystem approaches to restoration following the EXXON Valdez oil spill. Sponsored by Exxon Valdez Oil Spill Trustee Council, Anchorage, AK. 4/13-4/15/94.
- Varanasi, U., **T.K. Collier**, M.M. Krahn, and S.-L. Chan. (1994). Incorporation of screening technologies into early response and sampling strategies: Lessons from the EXXON Valdez oil spill. Presented at Prevention, Response, and Oversight 5 years after the Exxon Valdez Oil Spill. Anchorage, AK. 3/25/94. Presented by T.K. Collier.
- Collier, T.K.** (1994). Invited participant at Implementation Management Structure workshop for designing ecosystem approaches to restoration following the EXXON Valdez oil spill. Sponsored by Exxon Valdez Oil Spill Trustee Council, Anchorage, AK. 3/21-3/23/94.
- Collier, T.K.** (1994). NRDA/Restoration studies being conducted and planned by Environmental Conservation Division. Presented at EC Seminar Series, Seattle, WA. 2/16/94.
- Collier, T.K.** (1994). Overview of Environmental Conservation Division research directed towards NRDA studies of Commencement Bay/Hylebos Waterway.

- Presented to the Commencement Bay Natural Resource Trustees, Seattle, WA. 2/8/94.
- Collier, T.K.** (1993). Invited participant, Prince William Sound Ecosystem Study Planning Workshop. Cordova, AK. 12/4-12/6/93.
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